

## Opinion

# The worm turns

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WE GREW UP IN AN ENVIRONMENT WHERE the risk of death by infectious disease had seemingly just about receded, but we should now be well aware that complacency and overuse of antibiotics has led to the rise of super-bugs – untreatable in some cases – and most will know someone who has suffered as a result.

The desire to survive in nature is everything, and if organisms such as bacteria can develop resistance issues, we should not be surprised to hear that worms can also become resistant to commonly used chemicals that try to defeat them.

In most other farmed species there is a variety of chemicals used to get rid of worms in animals and, due to widespread and acknowledged resistance concerns, it is common to rotate these products annually, or even within year.

Yet in gamebirds, for many years, we have used just one product for worming in the feed. Is this logical or even sensible? I would argue that it is not now and it never was.

The main reason we do this is that there is only one licensed product for

treatment of worms in gamebirds. The UK licensing system, and the provisions of legislation, mean that when a disease is diagnosed, vets must first use a licensed product, and may only use other products as and when there is good justification to do so. This licensing system fails when there is a lack of availability of well-researched products to choose from, and there will never be much choice where there is little return available to the pharmaceutical companies for their investment. Believe it or not the gamebird industry is just not big enough to be of interest to these giant corporations.

Most medication used in gamebirds is not licensed as a result, but is applied under what is known as the “prescribing cascade”, a piece of legislation that was designed to enable vets to use products in these circumstances. However, fear of falling foul of the good justification argument, restrictions on marketing and promoting use of non-licensed products, and lack of understanding has, in my opinion, inappropriately caused licensed products to dominate over other very good medications.

*Heterakis gallinarum*, the worm that carries the vector which causes blackhead.



*Syngamus trachea*, or gapeworm, showing the typical Y shape formed by the smaller male being attached to the larger female.

I treat birds for NGO members in South East of England, and have noted over the last decade shoots where keepers have reported worming regimes that have appeared to fail, or been less effective. From these anecdotal reports concerns have subsequently arisen in adjacent shoots, which of course makes sense as birds will wander, carrying resistant worms over the boundaries.

In the hot spots of concern, I started prescribing other types of wormer that had anecdotally been previously tried with some success. Then worryingly last year, we tried four different wormers on one estate and found only one that worked at all, and that not as well as we would have liked.

This is significant as huge worm burdens can result in the death of a bird, and can also weaken the immune response and lead to other diseases establishing themselves through damage to the gut wall. The result is a necessity for more drugs, which is what we are all trying to avoid.

When we talk about worms in gamebirds, we are usually referring to the gapeworm *Syngamus trachea*. This causes obvious symptoms such as coughing, sneezing, head shaking, and gaping – all commonly described as “snicking”. Such obvious symptoms are easy to recognise and to recognise when they go away.

However, there are other important worms including *Heterakis gallinarum*

(the caecal worm), hairworms of the sub-family *Capillarinae*, roundworms and tapeworms. *Heterakis gallinarum*, although itself not generally a huge concern for health, is of course the vector for *Histomonas meleagridis*, which readers will know as blackhead disease. Blackhead has in the past been a significant cause of mortality and may be slowly creeping back since the demise of the only really effective treatment – Emtryl.

So, we need to start thinking much wider than just treating birds for gapeworms. We should look to other

farming industries by rotating the wormers used, both in season and between years. Looking at the lifecycles of the various worms, and once the infestations on an estate have been identified we should probably also worm specifically for that estate's issues as well. Often this will mean longer periods over which we worm birds. Worming of older birds than we are used to needs novel approaches to ensure we get the correct doses into the birds at the right time, but it is possible.

When doing so, it is important to ensure that appropriate withdrawal

periods are applied before birds enter the food chain, and any environmental concerns over use of particular products are considered and addressed.

I believe worming will become a much discussed issue over the next few years among gamekeepers, as we all move towards less use of medication overall. Worming will necessarily become more considered, administered on a case by case basis with specific programmes designed for each estate, shoot or region, and a greater variety of products will be needed to be truly effective long term.

## DIAGNOSIS OF WORMS

**GAPEWORM** infestation usually causes tracheitis, inflammation of the trachea, and the presence of the characteristic red worms up to 2cm long is diagnostic. They form a Y shape as the smaller male is permanently attached to the larger female worm. Eggs can also be found in a worm egg count of the faeces.

**CAECAL WORMS** can cause inflammation of the caecum, possibly with nodule formation at post-mortem and caecal 'cores' if blackhead is present. They can be found at post-mortem examination in caecal content.

**HAIRWORM** diagnosis is either through macroscopic examination, sieving intestinal contents or spotting the characteristic worm eggs in the bird's faeces. Hairworms are very long and very thin, and are barely visible with the naked eye. A post-mortem examination would find them in the small intestine or upper digestive tract.

**ROUNDWORMS** Due to the large nature of these, they are easily seen at post-mortem and can be up to 12cm in length in the duodenum and ileum, an enteritis, inflammation of the gut, can also be present. The oval, smooth-shelled, non-embryonated eggs will be found in faeces in a worm egg count test.

**TAPEWORM** diagnosis is on post-mortem examination which identifies the presence of worms – most species are large and easily distinguishable in the gut. They create very small lesions at point of attachment to the gut wall. Worm eggs can also be visualised in faecal counts.

## NOTE IT!

Mark Elliott is a specialist gamebird vet within the South Downs Veterinary Consultancy. In his spare time he runs a busy Small Animal practice treating a high proportion of working dogs. He is also secretary to the NGO Deer Branch committee.



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